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BASE MATERIAL WITH CARBON FILM

Abstract

PROBLEM TO BE SOLVED: To provide a film containing a carbon film as a main component on a surface to be formed with good adhesive properties by providing a film having a small internal stress on a layer in contact with a base plate, and laminating films having sequentially larger internal stresses as separating from the plate in a laminating direction.

SOLUTION: Films having sequentially larger stresses are formed likewise by forming a film to be laminated and having a smallest stress and then a film to be laminated and having next smaller stress on the previous film on a film formed in direct contact with a base plate. For example, a silicon nitride 24 is formed on a layer in contact with the plate, and a carbon film 25 is formed thereon. To this end, a hydrogen silicide gas such as, for example, a silane, nitrogen, ammonia are introduced into a reaction system, and then a hydrocarbon gas and nitrogen are similarly introduced. As the hydrocarbon, a gas of a methane hydrocarbon or the like, a silicon carbide like a tetramethylsilane partly containing silicon or a carbon chloride like a carbon tetrachloride may be used.

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